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AUTOMATIC DATA PROCESSING AND ANALYSIS

I. Discussion

A. The Planning Group has been exposed to facts which argue for the earliest possible employment of Automatic Data Processing techniques in intelligence processing. For example, achievements in photographic reconnaissance, both in the quantity of photography acquired and in the resolution of the product, have created a crisis in image processing and analysis. According to estimates of the National Photographic Interpretation Center, anticipated developments in photographic reconnaissance systems, unless matched by parallel developments in processing and analytical techniques, will by 1970 require that NPIC personnel treble and that the NPIC budget quadruple, compared with FY-65. Similar, though not necessarily comparable, problems are anticipated in the SIGINT processing and analytical

activities with the advent of satellite payloads capable of maintaining continuous surveillance of virtually the entire electromagnetic environment of one third of the earth.

B. The allocation of additional personnel and additional money will no longer suffice. The highly skilled people required are not available in sufficient numbers to satisfy the needs of CIA alone, much less the anticipated needs of the intelligence community. The CIA can no longer afford the expense of employing brute force techniques for the resolution of problems which may be amenable to the application of advanced technology.

C. The examples we have cited above for the photographic and SIGINT fields are typical of what we have come to know as the "data explosion." The problems have been created by preoccupation with collection programs. The "data explosion," in turn, has created an "analysis gap." The clearest evidence that such a gap may exist can be obtained from an examination of the Agency budget. We estimate that whereas approximately

25X1 [redacted] will be allocated to technical collection programs
25X1 in 1966, only [redacted] will be devoted to Automatic Data Processing (ADP), which appears to be the most likely tool for solving some of the critical processing problems which we anticipate.

D. Considerable effort by the Agency has been devoted to the study and analysis of computer applications within CIA. The use of computers in Agency accounting activities and specialized support applications (WALNUT, collection systems engineering and operations, and photographic mensuration) have been going on for some time and plans exist for the implementation of advanced computer programs to intelligence processes. Nevertheless, the effective application of ADP to the intelligence processes has not made sufficient progress due to some misconceptions. It is not true that to employ effectively Automatic Data Processing techniques an analyst must be a computer programmer, or that a successful programmer must acquire significant analytical

25X1 [redacted]

skills. It is not true that the effective utilization of ADP equipment will require organizational adjustment of a disruptive character. While it is advisable to have centralized control of technical knowledge in ADP programs, it is not necessary to centralize control over component computer systems. Yet these contentions, and more appear to have rather wide currency. The man-machine relationship as it will develop through the application of ADP programs to the intelligence process will be its own best denial of the misconception and organizational anxieties arising from them can best be relieved by training and indoctrination of our personnel in the principles and applications of ADP.

E. The past five years of study, debate and the limited application of ADP have effectively paved the way for a more aggressive application of ADP techniques to Agency programs. The program which has been described for the logical and progressive application of ADP is basically valid. However, the schedule should be accelerated and, unless the CIA undertakes to do so on its own initiative, a program may well be imposed

upon us by external elements which will exacerbate those very problems which our conservatism has heretofore sought to minimize.

F. With regard to specific applications, the equipment and techniques now exist for the rapid application of ADP to many management tasks including budget, inventory control, personnel records, contract data, etc. Planning for the application of machine processing to information filing and retrieval is well advanced and its implementation probably can be accelerated. These applications will develop into a capability for data manipulation and then evolve into true analytical programs from which relationships among various types of events and data through the application of correlation techniques can be derived. There will be a necessity for greater utilization of large data bases in analytical programs and for experimentation to develop new processes having direct application to the substantive intelligence activities of the Agency. Hopefully, predictive processes will evolve with time and experience.

G. In addition to these intelligence tasks, the application of machine processing techniques to communications will soon permit near real-time presentation and initial rough analysis of SIGINT, photographic, optical, audio and other data inputs permitting virtual real-time control of collection operations.

H. The application of machine processing techniques to Agency managerial, operational and intelligence programs probably will develop a momentum which will tend to compress the schedules now envisioned. Such a program must be supported, however, by adequate research programs in intelligence processes, if the program is not to become prohibitively expensive because of false applications and false starts. We believe that, in addition to the investment in qualified personnel and equipment, provision should be made to fund and staff research programs of the following magnitude:

[redacted] 25X1

II. Recommendations: It is recommended that:

A. The DCI direct each Deputy Director to review his programs for the application of ADP to his operations and processes as a matter of high priority and to submit within 60 days a phased and costed program.

B. The CIA Planning Staff prepare within 90 days a phased and costed Agency program for ADP, based on Directorate submissions, for review by the Executive Director-Comptroller and approval by the DCI.

C. The Deputy Director for Science and Technology be directed by the DCI to implement the approved Agency ADP program as executive agent and to act as Chairman of an ADP executive coordination committee consisting of the Deputy Directors concerned. The committee should report to the DCI quarterly.

D. The DD/S&T establish and staff an intelligence sciences laboratory to study and apply on an experimental basis new techniques in ADP and analysis to Agency programs as a service of common concern.